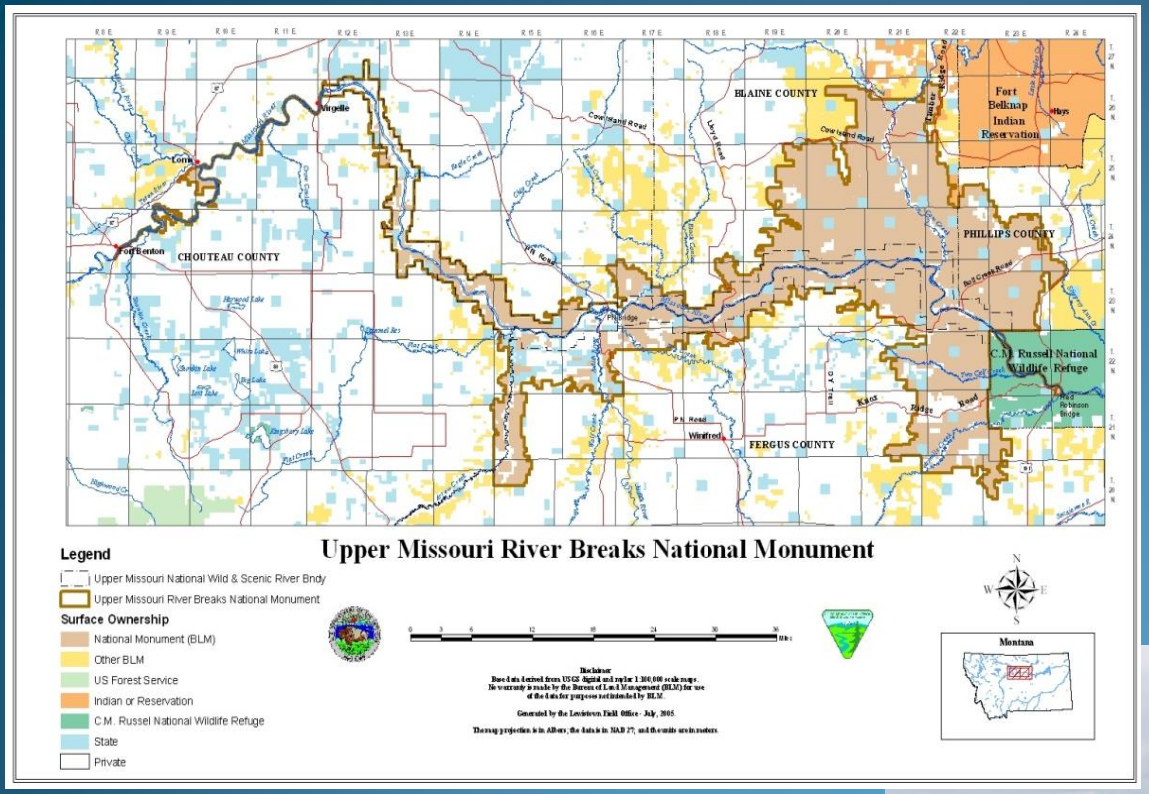
Upper Missouri River Breaks National Monument Federal Reserved Water Rights Proposal

Judith River and Arrow Creek, Central Montana

Response to the RWRCC, March 8, 2012

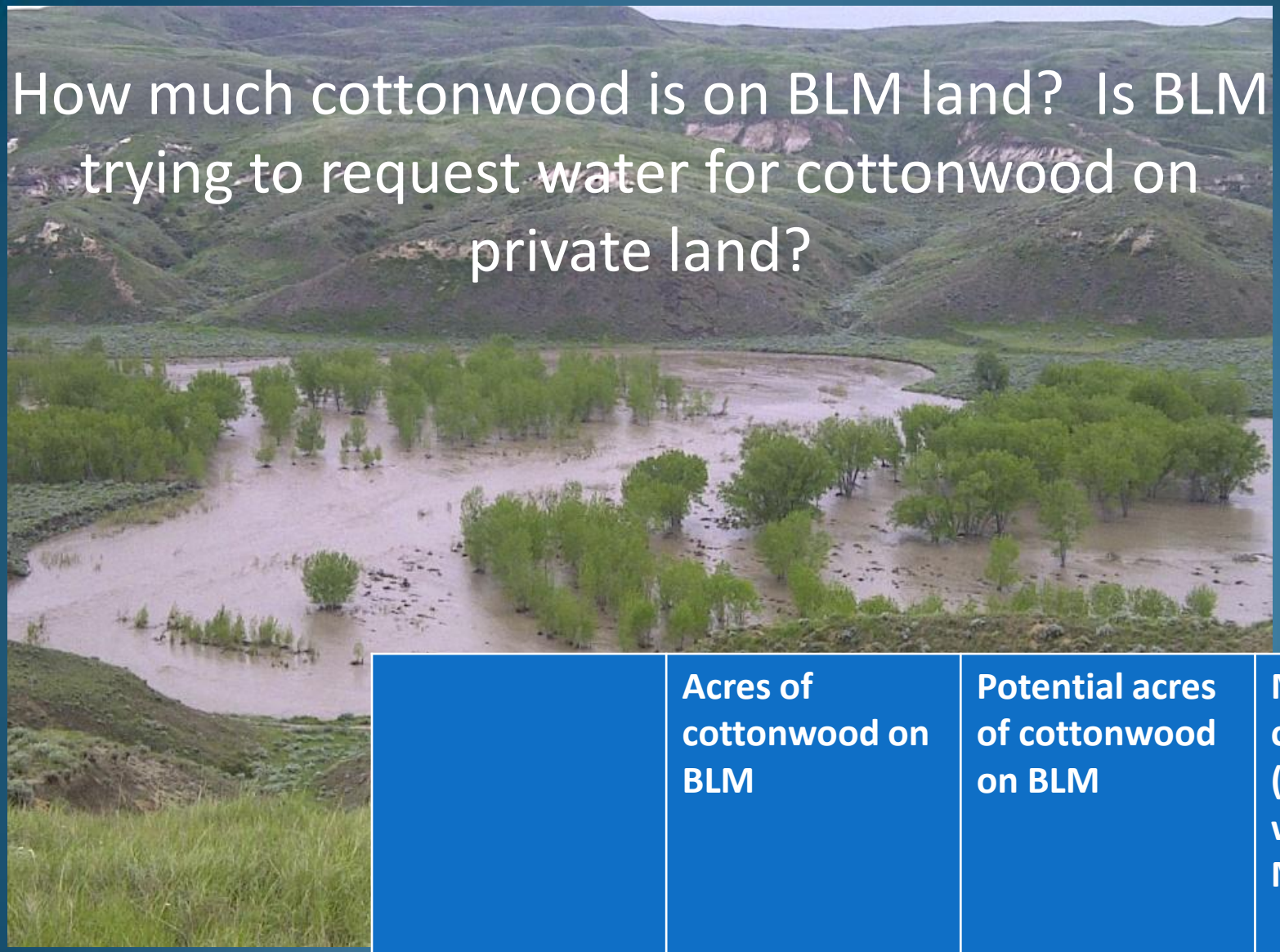


"These tributaries contain outstanding objects of biological interest that are dependent on water, such as a fully functioning cottonwood gallery forest ecosystem that is rare in the Northern Plains."

"Therefore, there is hereby reserved, as of the date of this proclamation and subject to valid existing rights, a quantity of water in the Judith River and Arrow Creek sufficient to fulfill the purposes for which this monument is established."

Presidential Proclamation 7398 of January 17, 2001

How much cottonwood is on BLM land? Is BLM trying to request water for cottonwood on private land?



	Acres of cottonwood on BLM	Potential acres of cottonwood on BLM	Miles of river channel on BLM (percent total within Monument)
Judith River	40	87	1.05 (8%)
Arrow Creek	75	232	2.83 (10%)

Requirements for the Establishment and Recruitment of Plains Cottonwood

- Plains cottonwood is a pioneer, flood-dependent species.
- Successful seedling establishment is associated with bare, moist sites that are safe from FUTURE disturbance.
- Root growth of new seedlings must keep pace with declining water tables through the summer.
- Historic, shallow alluvial water tables must be maintained.

Approach and Methods

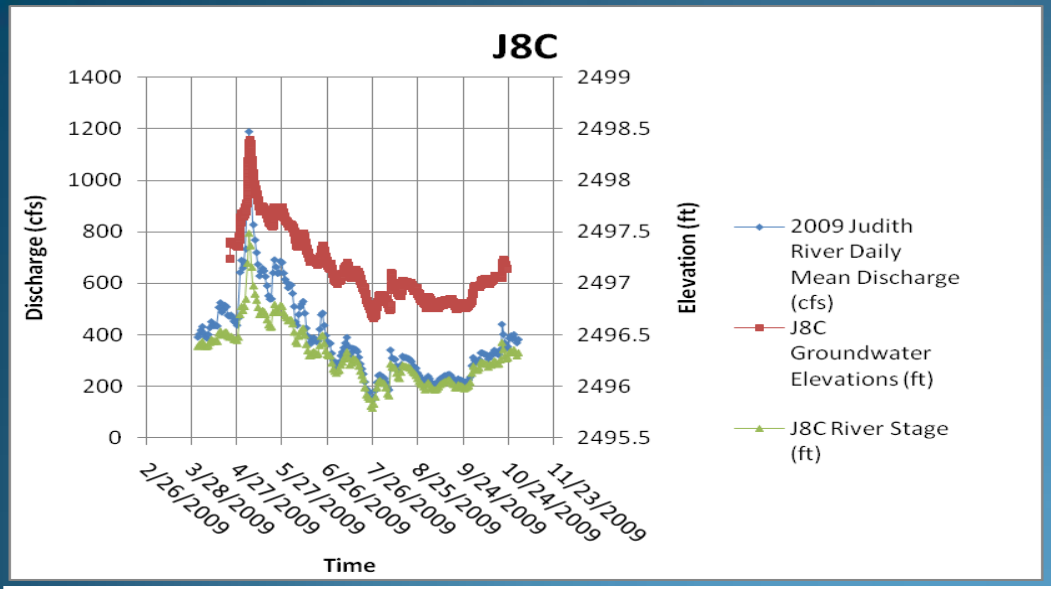
Measure and quantify the flow regimes on the Judith River and Arrow Creek that meet the conditions suitable for the establishment and recruitment of cottonwood.

UMRBNM Proposal Goals

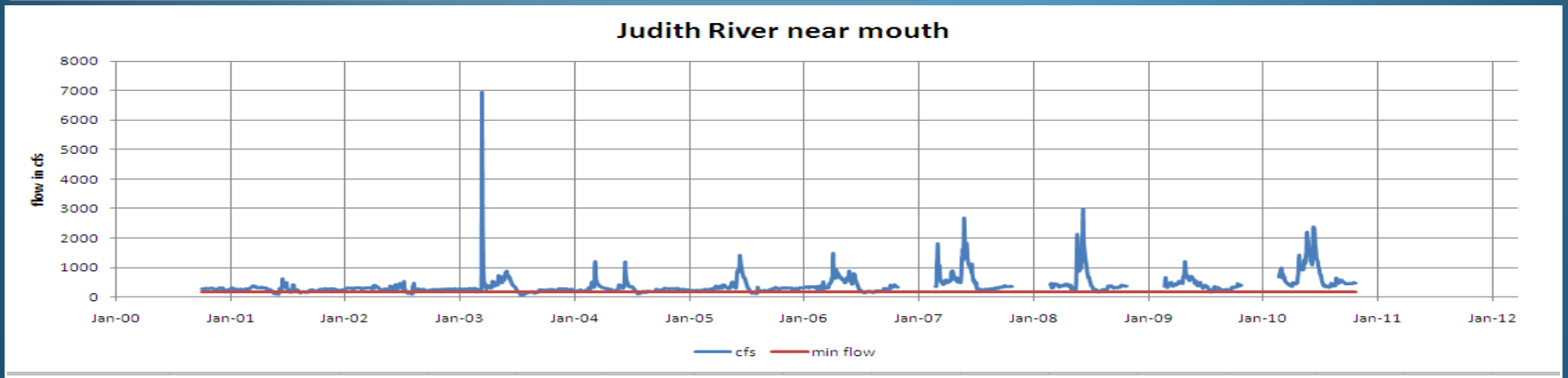
- Protection of peak flow magnitude, frequency, and timing within a relative range of what has occurred historically.
- Prevention of sudden, drastic changes in the rate of flow decline during the germination window.
- Maintenance of the shallow alluvial aquifers, which is dependent upon some water being in the river channel.

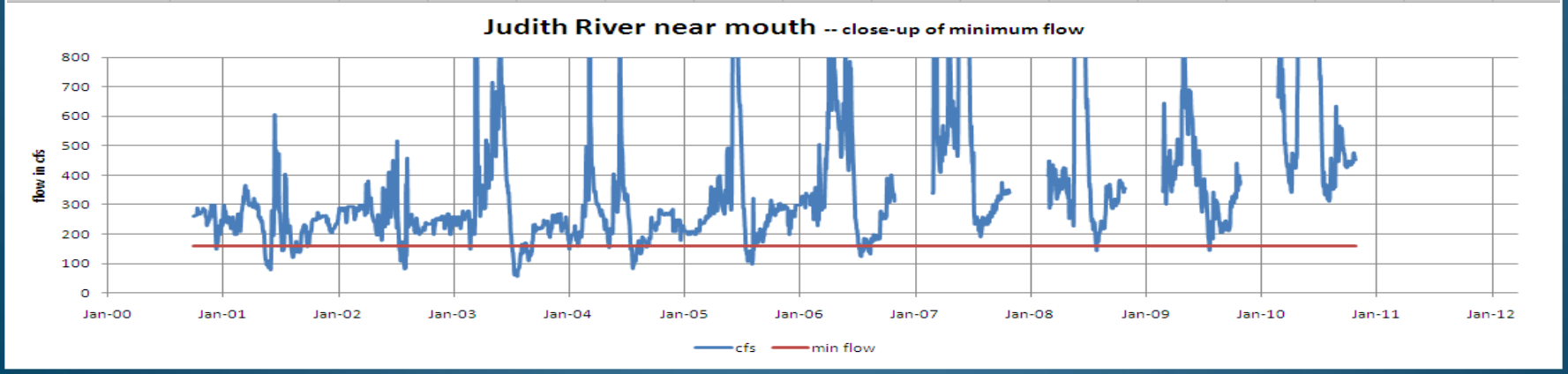
Instream Flow Request

- 160 cubic feet per second (cfs) on the Judith River
- 5 cfs on Arrow Creek from March 1 to July 31



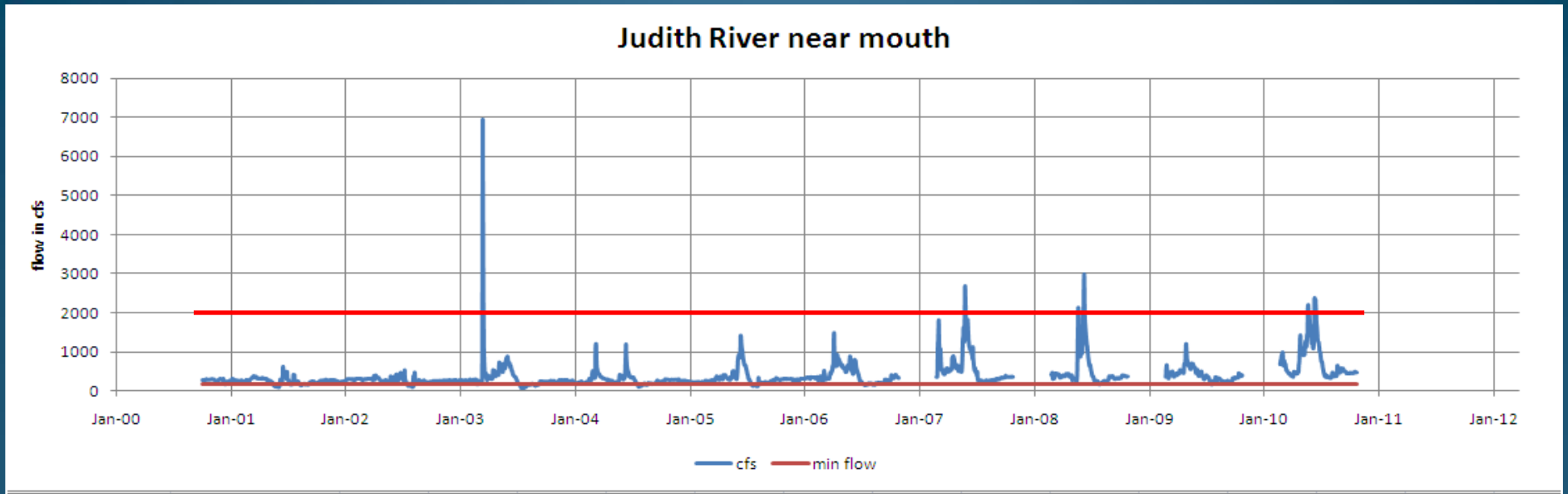
Why would BLM request something that already exists?

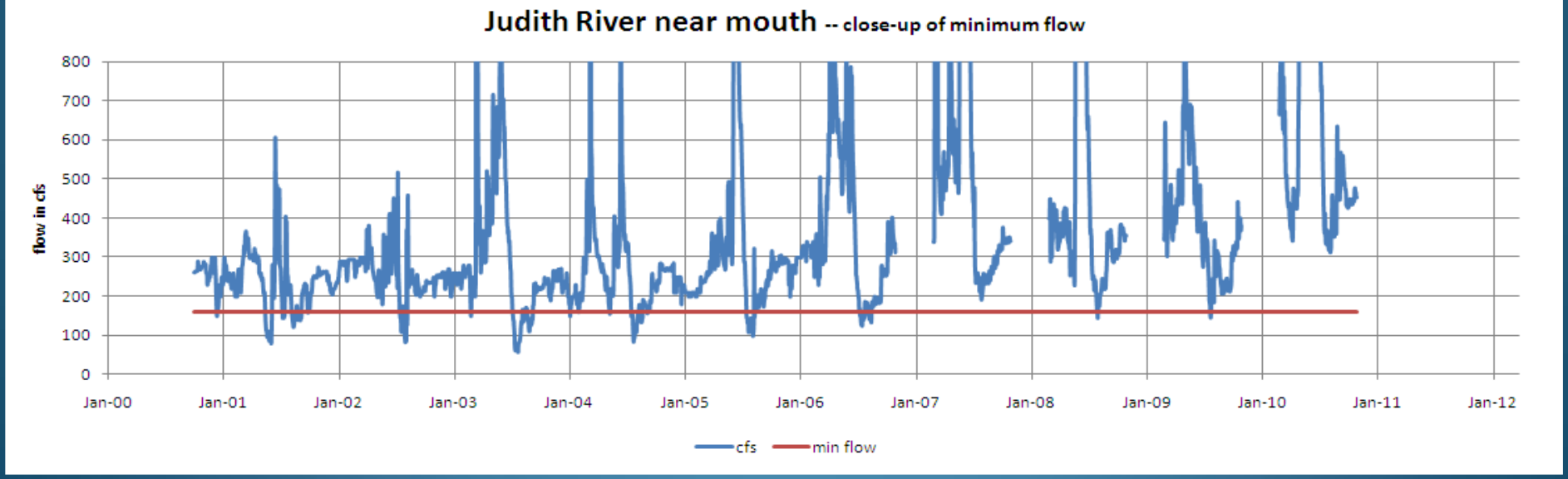




Cap on Future Development

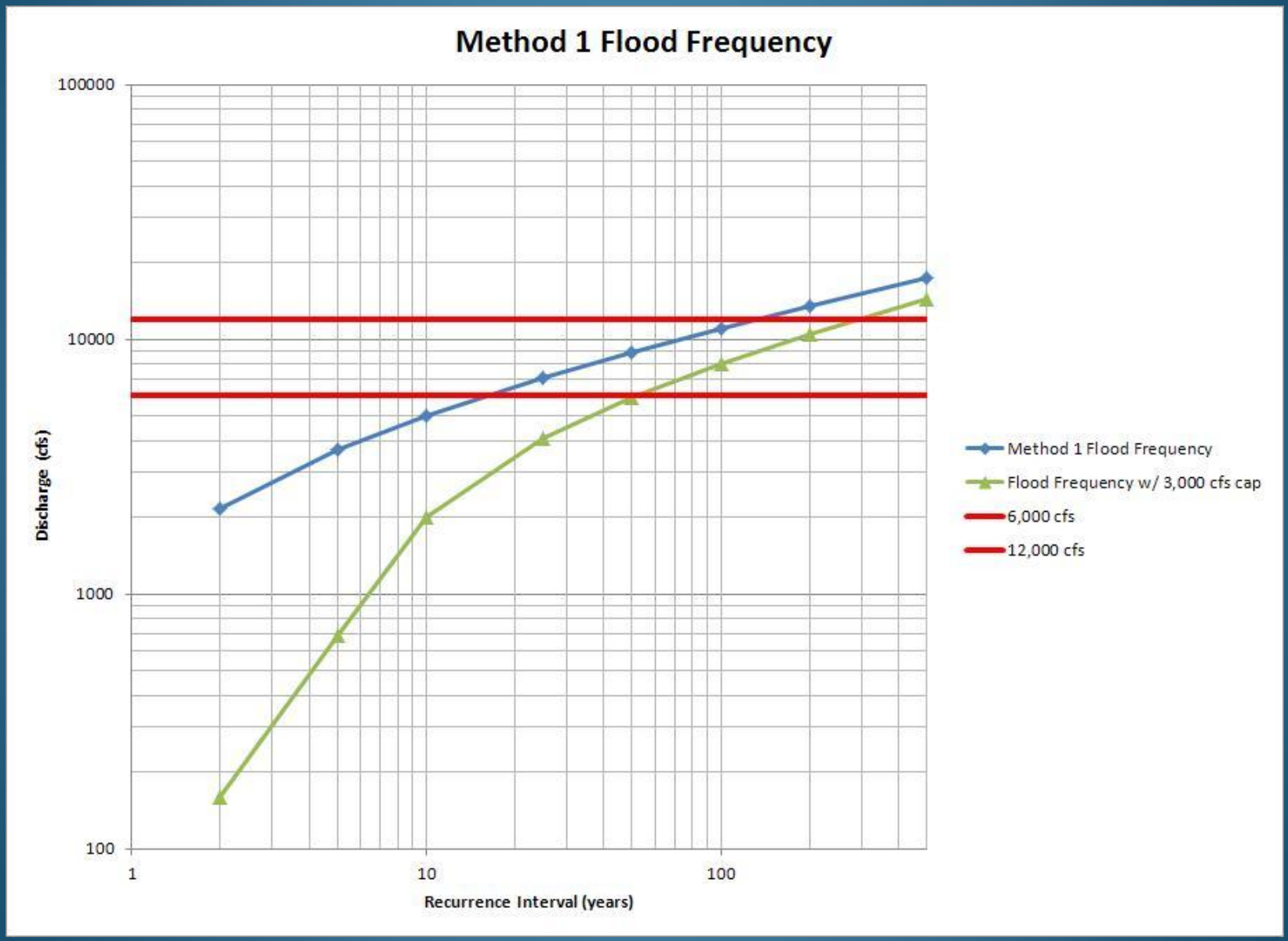
- Judith River Available Water Supply (JRAWS) would be 1,990 cfs.
- Arrow Creek Available Water Supply (ACAWS) would be 457 cfs.
- These values are the difference between the instream flow requests and the median peak discharge estimates for the watersheds.





What's the point? Aren't the basins over appropriated? How does a cap work?

Why is the development cap not larger?



Proposed Limitations on Future Appropriations

- Mainstem storage structures would not be permitted on the Judith River and Arrow Creek.
- Direct from source diversions greater than 10 cfs would be required to operate under a “ramped diversion” regime that prevents an increase in diversion of more than 10 cfs per day or 20 percent of the total allowed diversion, whichever is greater, in any 24-hour period.
- Applications for storage reservoirs larger than 15 acre-feet capacity must include hydrologic analysis showing the expected 2-year recurrence interval peak flow, which would be subtracted from the available water supply.
- Groundwater appropriations not exempted from permit requirements under the MCA 85-2-306, that are hydraulically connected to surface water will be subtracted from the available water supply.

Exemptions

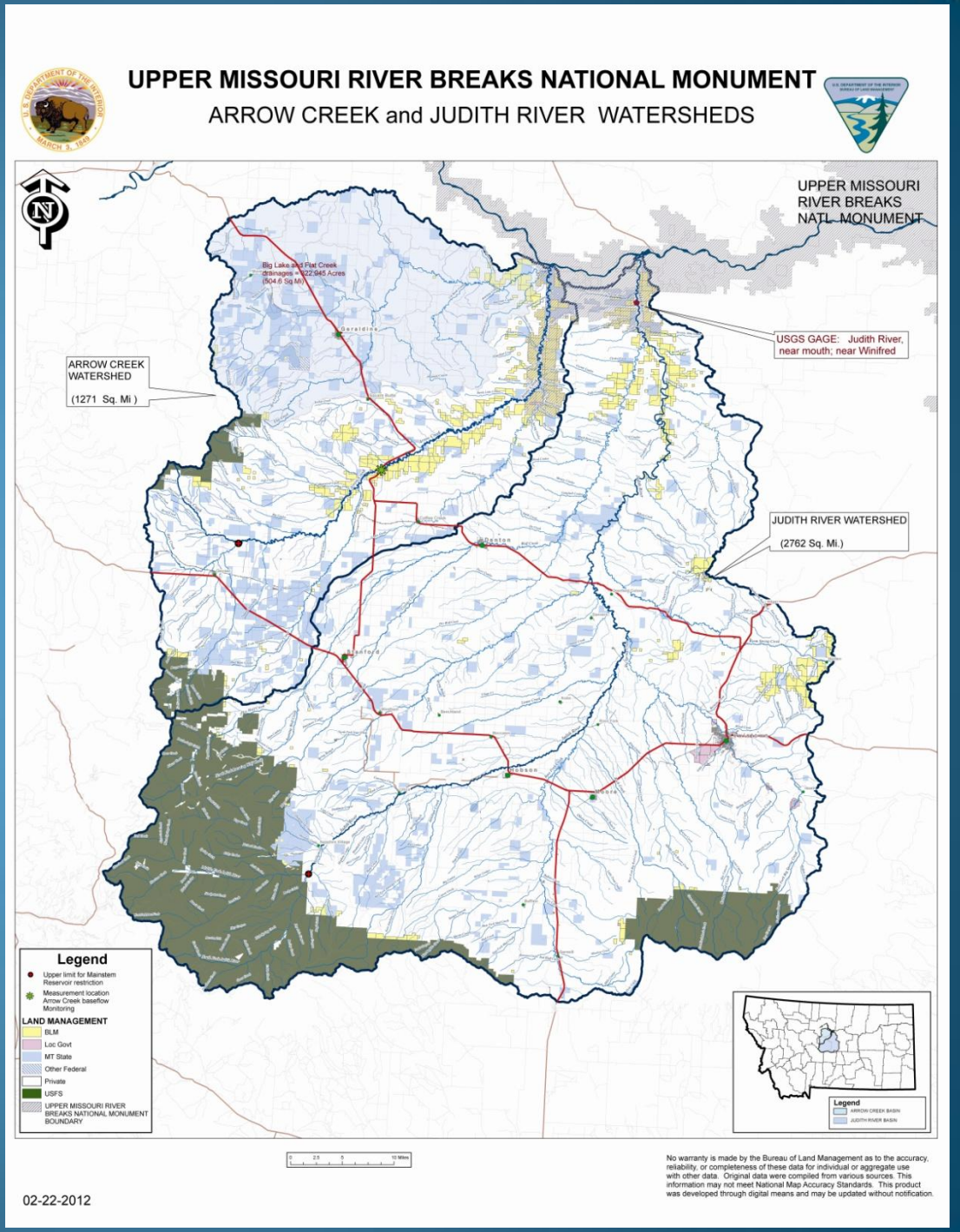
- Small stock reservoirs (less than 15 acre-feet capacity) and domestic and stockwater wells/springs less than 35 gallons per minute to 10 acre-feet per year would be exempted from the development cap based on the MCA 85-2-306 permit exceptions.
- Instream flow applications for non-consumptive uses, pursuant to the MCA 85-2-316, will not be subtracted from the available water supply.

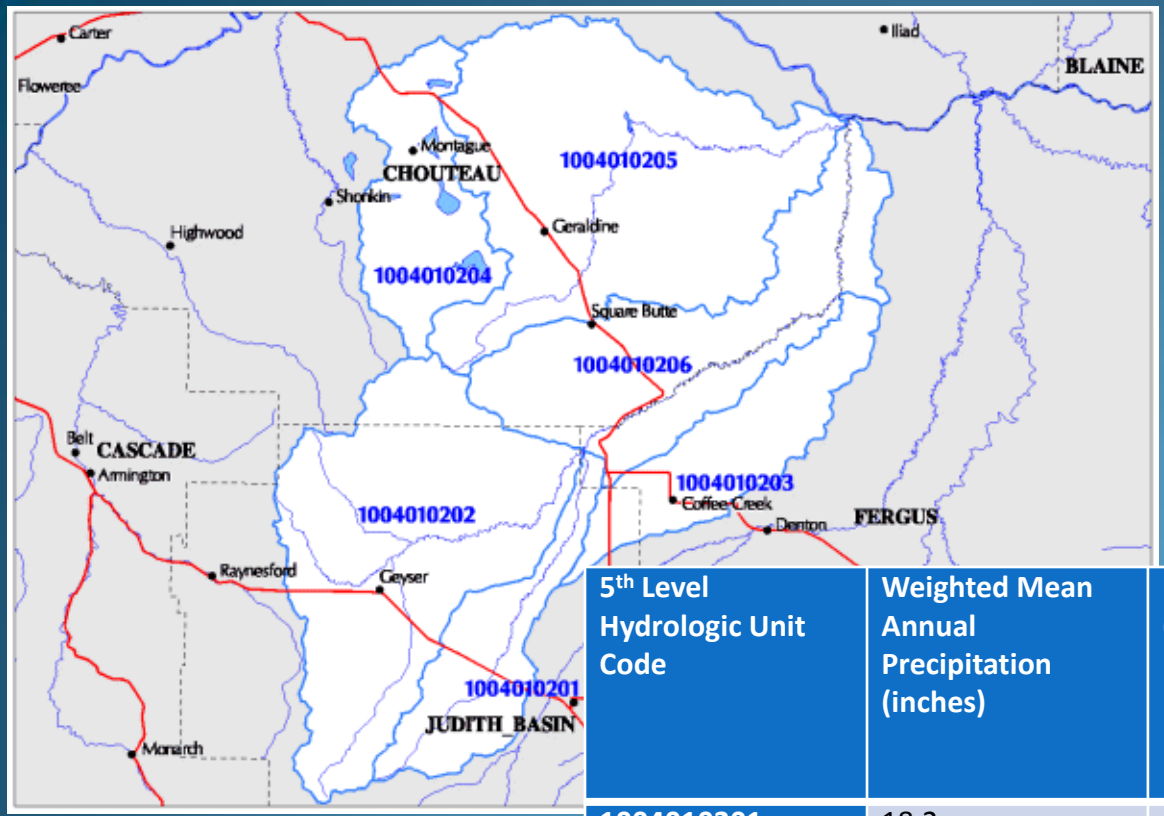
Judith River May 2008

Judith River July 2011

Upstream Limitation on Mainstem Reservoirs

Where are the instream flow requests on Arrow Creek and where would they be measured?





- Instream Flow Request – 5 cfs from Coffee Creek to Flat Creek
- Flow Measurement and Location – 3.5 cfs at Highway 80 bridge

5th Level Hydrologic Unit Code	Weighted Mean Annual Precipitation (inches)	Drainage Area (square miles)	*Mean Annual Runoff (cubic feet per second)	Percent Mean Annual Runoff of Watershed below Coffee Creek
1004010201	18.2	100.4	4.18	15
1004010202	20.3	322.6	14.61	52
1004010203 (Coffee Creek)	15.0	115.8	3.77	13
1004010206 (upstream of Highway 80 bridge)	15.0	30.7	1.07	4
1004010206 (downstream of Highway 80 bridge to Coffee Creek)	15.0	135.4	4.38	16

*Calculated using *A Method for Estimating Mean Annual Runoff of Ungaged Streams Based on Basin Characteristics in Central and Eastern Montana*. (U.S. Geological Survey Water-Resources Investigations Report 84-4143)